

## MANUFACTURE OF COMPOUND SEMICONDUCTOR THIN FILM

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### Abstract

**PURPOSE:** To easily execute the ALE growth operation of an InP-based compound semiconductor thin film and a mixed crystal-based compound semiconductor thin film and to satisfactorily control the composition of a mixed crystal by a method wherein respectively specific compounds are used as a raw-material compound containing a group Vb element and as a raw-material compound containing a group IIIb indium element.

**CONSTITUTION:** A raw-material compound which contains a group IIIb element and a group Vb element in the periodic table as elements of constituent components of a compound semiconductor thin film is introduced onto a substrate 18 placed in a vapor reaction container 17; and a III-V compound semiconductor thin film is manufactured by a chemical vapor growth method. At least one kind of compound selected from hydrates of said group Vb element is used as the raw-material compound containing the Vb element. At least one kind of compound selected from indium compounds, containing chlorine, expressed by  $(R1)_2InCl$ ,  $R2InCl_2$  and  $InCl$  (where R1 represents a 2C or more alkyl group or alkenyl group and R2 represents a 5C or less alkyl group or alkenyl group) is used as the raw-material compound containing group III b indium.